AMENDMENT TO CLAIMS

The following listing of claims replaces all prior listings of claims in the application:

WHAT IS CLAIMED:

1. (Currently Amended) A mode-switching transformer comprising a first line in common mode and a second line in differential mode, each line comprising two sections in series respectively coupled with one of the two sections of the other line and all sections having the same lengths, wherein the common mode line is connected in series with a capacitor, to lower ~~the~~ a central frequency of a bandwidth of the transformer ~~passband~~, the $\lambda/4$ lengths of the sections being chosen to correspond to a central frequency greater than ~~the~~ a desired central frequency ~~desired~~ for the transformer.

2. (Currently Amended) The transformer of claim 1, wherein the value of capacitor C respects the following relation:

$$C = \frac{1}{2\pi f_0 Z_c \, tg(\beta L)},$$

where f_0 designates the desired central frequency ~~of the desired passband~~, where L designates the length of the two sections in series calculated in $\lambda/2$ from said central frequency greater than the desired central frequency, where Z_C designates the characteristic line impedance, and where β designates the phase constant.

3. (Currently Amended) The transformer of claim 1, in which each section is a plane spiral, two first sections being formed in a first conductive layer of a ~~multiplayer~~ multilayer circuit and being laterally spaced from each other, the two other sections being also formed in said first conductive ~~level~~ layer and being respectively interlaced with the first sections, at least one armature of the capacitor being formed in said first conductive layer and connections being formed in a second conductive layer, the two conductive layers separated by a dielectric.

4. (Currently Amended) The transformer of claim 3, in which the capacitor is located in the center of the spirals of the first sections.

5. (Currently Amended) The transformer of claim 1, formed in two conductive levels separated by a dielectric, two sections and one armature of the capacitor being patterned in each ~~metallization~~ conductive level.

6. (Original) The transformer of claim 1, wherein the transformer is applied to frequencies on the order of one gigahertz.

7. (Original) A mode-switching transformer, comprising:

a common mode winding;

a differential mode winding electromagnetically coupled with the common mode winding; and

a capacitor electrically coupled to the common-mode winding.

8. (Original) The mode-switching transformer of claim 7 wherein the common mode winding comprises two sections and the differential mode winding comprises two sections, each section having an equal length.

9. (Original) The mode-switching transformer of claim 7 wherein a central frequency of the transformer is in the gigahertz frequency range.

10. (Original) The mode-switching transformer of claim 8 wherein the length of each section of each winding is equivalent to a quarter of the length of a first frequency, wherein the first frequency is greater than a central frequency of the transformer.

11. (Original) The mode-switching transformer of claim 7 wherein the common mode winding is formed within a first metallization layer and the differential mode winding is formed within a second metallization layer, the two metallization layers separated by a dielectric.

12. (Currently Amended) The mode-switching transformer of claim 7 wherein the capacitor comprises a first armature disposed in a first metallization layer and a second armature disposed in a second metallization layer, the two metallization layers separated by a dielectric.

13. (Withdrawn) An integrated circuit, comprising:
a mode-switching transformer, including,
a common mode winding;
a differential mode winding electromagnetically coupled with the common mode winding; and
a capacitor electrically coupled to the common-mode winding.

14. (Withdrawn) The integrated circuit of claim 13 wherein the integrated circuit comprises a communications circuit.

15. (Withdrawn) The integrated circuit of claim 13 wherein the common mode winding comprises two sections and the differential mode winding comprises two sections, each section having an equal length.

16. (Withdrawn) The integrated of claim 13 wherein a central frequency of the transformer is in the gigahertz frequency range.

17. (Withdrawn) The integrated circuit of claim 15 wherein the length of each section of each winding is equivalent to a quarter of the length of a first frequency, wherein the first frequency is greater than a central frequency of the transformer.

18. (Withdrawn) The integrated circuit of claim 13further comprising a plurality of series-connected mode-switching transformers.

19. (Withdrawn) An electronic system, comprising:
an integrated circuit, including,
a mode-switching transformer, including,
a common mode winding;

a differential mode winding electromagnetically coupled with the common mode winding; and

a capacitor electrically coupled to the common-mode winding.

20. (Withdrawn) The electronic system of claim 19 wherein the integrated circuit comprises a communications circuit and wherein the electronic system comprises a mobile telephone.

21. (Withdrawn) A method of reducing a central frequency of a transformer having first and second windings, the method comprising:

sizing the windings based upon a first frequency that is greater than the desired central frequency of the transformer; and

coupling a capacitance to the first winding.

22. (Withdrawn) The method of claim 21 wherein the central frequency is in the gigahertz frequency range.

23. (Withdrawn) The method of claim 21 wherein sizing the windings comprises:

forming first and second series-connected windings to form the first winding, each of the series-connected windings having a length approximately equal to a quarter of a wavelength of the first frequency; and

forming first and second series-connected windings to form the second winding, each of the series-connected windings having a length approximately equal to a quarter of a wavelength of the first frequency.